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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,182

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EXAMINER

SCHLENTZ, NATHAN W

ART UNIT

PAPER NUMBER

1616

MAIL DATE

DELIVERY MODE

08/30/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/537,182	<b>Applicant(s)</b> CHRISSTOFFELS ET AL.	
	<b>Examiner</b> Nathan W. Schlientz	<b>Art Unit</b> 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 14-17, 19-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-17, 19-29 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/15/10</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 April 2010 has been entered.

### ***Status of Claims***

Claims 14-17, 19-29 and 31 are pending and are thus examined herein on the merits for patentability. No claim is allowed at this time.

### ***Withdrawn Rejections***

Rejections and/or objections not reiterated from the previous Office Action are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set of rejections and/or objections presently being applied to the instant application.

***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 15 April 2010 was filed concurrently with the RCE. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

***Transitional Phrase***

With respect to instant claim 14 reciting the transitional phrase "composed of" when disclosing what monomer units are present in the at least one N-vinylamide-based copolymer, the examiner is interpreting "composed of" as synonymous with "consisting essentially of". See MPEP 2111.03.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 14 and 19 recite weight % of the monomer units. However, the instant specification discloses the monomer units present at mol % instead of weight % (pg. 15, ln. 12-32).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

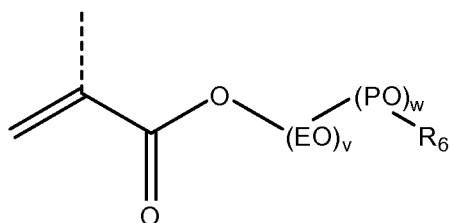
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1,148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
1. Claims 14-17, 19-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morschhäuser et al. (WO 02/44268; US 6,964,995 is the English-language equivalent and is referred to herein) in view of Narayanan et al. (WO 99/37285).

***Determination of the scope and content of the prior art***

**(MPEP 2141.01)**

Morschhäuser et al. teach water-soluble or water-swellaable copolymers comprising open-chain N-vinyl amides (i.e., N-vinylformamide, N-vinylmethylformamide, N-vinylmethyleacetamide and N-vinylacetamide) or cyclic N-vinyl amides with a ring size of 3 to 9 (i.e., N-vinylpyrrolidone and N-vinylcaprolactam) (col. 2, ln. 44-49), and a macromonomer comprising acrylally or methacrylally monofunctionalized alkyl ethoxylates of the following formula:



such as methacrylic acid C<sub>8-14</sub> alcohol ethoxylate esters with 3-25 EO units (col. 3, ln. 5 through col. 4, ln. 55; and col. 9, ln. 24-45). Morschhäuser et al. teach specific examples wherein Genapol LA-070<sup>®</sup> methacrylate, Genapol T-250<sup>®</sup> methacrylate, Genapol BE-020<sup>®</sup> methacrylate, Genapol O-150<sup>®</sup> methacrylate, Genapol LA-250<sup>®</sup> methacrylate, Genapol LA-030<sup>®</sup> methacrylate, and Genapol LA-040<sup>®</sup> methacrylate are copolymerized with an N-vinyl amide (Examples 1-8).

***Ascertainment of the difference between the prior art and the claims***

**(MPEP 2141.02)**

Morschhäuser et al. do not explicitly disclose the copolymers as being used with an active compound for the treatment of plants, as instantly claimed. However, Narayanan et al. teach a composition comprising an active chemical and a particulate polysaccharide matrix having improved water dispersibility and dispersion stability in aqueous solutions by the incorporation of an N-vinyl lactam monomer and a hydrophobic comonomer, wherein the composition is useful in cosmetic and pre- and post- emergent agrochemical formulations (abstract; pg. 2, ln. 1-6 and 13-19; pg. 5, ln. 21-26; pg. 6, ln. 12-16; and claims 1 and 18).

Narayanan et al. teach a composition comprising an active chemical and a particulate polysaccharide matrix having improved water dispersibility and dispersion stability in aqueous solutions by the incorporation of an N-vinyl lactam monomer and a

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hydrophobic comonomer, wherein the N-vinyl lactam monomer is preferably N-vinyl pyrrolidone or mixtures of N-vinyl pyrrolidone and N-vinyl caprolactam (pg. 3, ln. 2-7), and the hydrophobic comonomer is a polymerizable compound containing an olefinically unsaturated group, such as lower alkylamino lower alkyl acrylates and methacrylates, lower alkyl vinyl ethers, and mixtures of these compounds, wherein alkylamino alkylmethacrylates are preferred (pg. 3, ln. 8-12 and 16-24). Narayanan et al. further teach that the concentration of the N-vinyl lactam monomer with respect to the hydrophobic component in the copolymer can vary between about 60 and about 98.5 wt.%, preferably between about 70 and about 95 wt.%, and that the weight ratio of N-vinyl lactam to hydrophobic comonomer is preferably between about 4:1 and 8:1 (pg. 4, ln. 1-12).

Furthermore, Narayanan et al. teach explicit examples of compositions comprising 98:2 and 80:20 ratios of N-vinyl pyrrolidone and dimethylamino ethyl methacrylate (pg. 11, Examples 5 and 6). Narayanan et al. also teach that the modified matrix provides compatibility with a wide variety of conventional agrochemical agents including plant growth regulants, fertilizers, pre- and post- emergent herbicides, pesticides, fungicides, nematocides, etc., as well as personal care agents for skin and hair conditioning (pg. 5, ln. 21 to pg. 6, ln. 16).

### **Finding of *prima facie* obviousness**

#### **Rational and Motivation (MPEP 2142-43)**

Therefore, it would have been *prima facie* obvious for one skilled in the art at the time of the invention to formulate a composition for treating plants comprising plant

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growth regulants, fertilizers, pre- and post- emergent herbicides, pesticides, fungicides or nematocides, at least one N-vinyl amide, such as N-vinylpyrrolidone or N-vinylcaprolactam; at least one alkoxy alkyl acrylate or methacrylate, such as methacrylic acid C<sub>8-14</sub> alcohol ethoxylate esters with 3-25 EO units; and optionally at least one lower alkyl vinyl ether, as reasonably taught by Morschhäuser et al. and Narayanan et al. It would have been *prima facie* obvious to formulate the polymer wherein the weight ratio of N-vinyl lactam to hydrophobic monomer (i.e., alkoxyalkyl acrylate or methacrylate comonomer) is preferably between about 4:1 and 8:1, as reasonably taught by Narayanan et al.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

### ***Response to Arguments***

Applicants argue on page 5 that the copolymers of the present claims are structurally different from the copolymers of Morschhäuser et al. because the copolymers of Morschhäuser et al. are grafted copolymers which are obtained by copolymerizing the monomers A and B with macromonomer C in the presence of a polymeric additive D such that the monomers A and B and the macromonomer C are grafted onto the main polymeric additive D thereby forming side chains on the backbone of the main D chain. However, the examiner respectfully argues that polymeric additive



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D is merely an additive present from 1.5 to 10% by weight, and do not form the backbone of the copolymer. The polymerization takes place between monomers A and B and macromonomer C, wherein the particular additive D determines whether greater or lesser fractions of the additive will be incorporated into the polymer (col. 5, ln. 6-14). It appears that the backbone of the copolymer is formed by monomers A and B and macromonomer C with polymeric additive D grafted onto this copolymer in an amount dependent on the particular additive. Also, it is noted that additive D functions to prevent the formation of overcrosslinked polymer fractions in the copolymer which forms in the actual polymerization step (col. 5, ln. 6-9).

Applicant also argues on page 6 that the Office Action has not provided any evidence why one of ordinary skill in the art would have considered the copolymer of Morschhäuser et al. useful in the field of agricultural adjuvants. The examiner respectfully argues that Narayanan et al. clearly teach that copolymers comprising an N-vinyl lactam and a hydrophobic comonomer are suitable for use in cosmetic and pre- and post- emergent agrochemical formulations (abstract; pg. 2, ln. 1-6 and 13-19; pg. 5, ln. 21-26; pg. 6, ln. 12-16; and claims 1 and 18). Narayanan et al. also teach that the modified matrix provides compatibility with a wide variety of conventional agrochemical agents including plant growth regulants, fertilizers, pre- and post- emergent herbicides, pesticides, fungicides, nematocides, etc., as well as personal care agents for skin and hair conditioning (pg. 5, ln. 21 to pg. 6, ln. 16). Therefore, Narayanan et al. teach that copolymers according to Morschhäuser et al. are suitable for use in both cosmetic formulations and agricultural formulations.

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***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Schlientz whose telephone number is (571)272-9924. The examiner can normally be reached on 9:00 AM to 5:30 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann R. Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NWS

/John Pak/

Primary Examiner, Art Unit 1616